

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph that begins on page 12, line 10 of the specification as follows:

For preparing, for example, ~~α -aldehyde- ω -hydroxyl~~ α -aldehyde- ω -thiol PEG as the hetero-bifunctional PEG, the terminal hydroxyl group of α -acetal- ω -hydroxyl PEG is mesylated with methanesulfonyl chloride, converted to dithiocarbonate with potassium O-ethyl dithiocarbonate, and further reduced to thiol with alkylamine, and the resulting product is treated with acid. Further, α -hydroxy- ω -thiol PEG, α -carboxyl- ω -thiol PEG, and α -amino- ω -thiol PEG may be prepared by subjecting α -aldehyde- ω -thiol PEG to reduction, oxidation, or treatment with ammonia followed by aminization by reduction, respectively.

Please amend the paragraph that begins on page 24, line 16 of the specification as follows:

To 100 μ l of the solution of CdSe-ZnS-CdS semiconductor nanoparticles prepared in Preparation Example 2, 1 ml of phosphate buffer and 20 mg of the hetero-bifunctional PEG of a number average molecular weight of 2000 prepared in Preparation Example 3 were added, and vigorously stirred in oblique rays at a room temperature. After 30 minutes, 10 ml of n-hexane and 9 ml of phosphate buffer were added, and vigorously stirred for additional 5 minutes. ~~After 30 minutes, 10 ml of n-hexane and 9 ml of phosphate buffer were added, and vigorously stirred for additional 5 minutes.~~ The mixture was then left still to phase-separate. Upon irradiation with UV (254 nm), fluorescence was observed only in the lower phase (aqueous phase).

Please amend the paragraph that begins on page 27, line 3 of the specification as follows:

The biotin-PEG-modified quantum dots and α -methoxy- ω -thiol-PEG-modified quantum dots were respectively dissolved in a PBS solution, avidin labeled with commercially available Texas Red was added, and the mixtures were respectively stirred at a room temperature. After 1 hour, the fluorescence spectrum was measured (at an excitation wavelength of 400 nm), and the area

of the fluorescence spectrum derived from Texas Red was integrated (peak area). At different quantitative ratios of the α -biotin- ω -thiol-PEG-modified quantum dots or ~~α -methoxy- ω -thiol-PEG-modified~~ α -methoxy- ω -thiol-PEG-modified quantum dots to the Texas Red-labeled avidin, the energy transfer from the quantum dots to Texas Red was measured in this way. The results are shown in Fig. 1.